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enthusiasm for the subject and will inspire their students to the same enthusiasm.

Finally, Professor Downer has some interesting remarks, into which, for lack of space, we cannot follow him, about the remedies for the use and the abuse of translations (38–40).

A feature of the paper highly to be commended is the Index (41). C. K.

THE TERMINOLOGY OF ANATOMY[1]

A curious and interesting history attaches itself to the names bestowed upon the various parts of the human body. Some belong to the Renaissance period; others go back to the time of Galen, i. e. to the first century of our era; others had their origin still farther back in the ancient classical world. In this inviting field, science and the Classics may happily go hand in hand. The old anatomists, in their endeavor to describe a structure, sought often for some familiar object by which to designate it, something that was both homely and appropriate. The result is that strange terminology of technical science which is at once the despair and the bugbear of the layman and the beginner. To let a name serve merely as a tag to a structure, however, and to neglect the allusion and the history which the name itself contains, is to miss half the delight in the work. A student of the Classics, too, may find it not unworthy of his time thus to contemplate the lineaments of his being.

Two sheets of tissue invest the delicate structure of the brain, protecting and nourishing it as a mother might her child. This, at least, was the way the ancient Arabic anatomists viewed it, and they called one by a name later rendered into Latin by *dura mater*. Their name for the inner, closely investing, sheet of nourishing blood vessels was later translated by *pia mater*. Between these two membranes is a tissue of threads and strands like a cobweb; hence its Greek designation, ἀραχνοειδής, 'like a cobweb'.

For the parts of the brain there is a wonderful array of picturesque terms. Its outer surface of gray matter is the *cortex*. This sheet of 'bark' is folded and crumpled into a strange and characteristic pattern. Each curve of the folding is a *gyrus*, 'ring'. Between the folds are the 'furrows', *sulci*. In ordinary language we speak of these as 'convolutions' and 'fissures'. The globe of the brain is divided into two hemispheres, and in the fissure between them the *dura mater*, curved like a sickle, forms the *falx*, its front end fastened to a bony knob that looks like the comb of a cock and so is called *crista galli*. The horizontal stretch of *dura mater* between the cerebrum and the cerebellum is the *tentorium*, or tent-like cover. Four rounded bodies joined closely together and lying deep in the center of the brain are the *corpora quadrigemina*. In front of them is a curious structure, shaped like a pine cone, the 'pineal' body, which the ancients regarded as the seat of the soul. In the base of each hemisphere is a mass of gray matter, out of which the optic nerve was supposed to emerge. The old anatomists likened this hidden structure to a room in a house, and hence called it *thalamus*. A patch of gray matter hidden deep in the hemisphere is called the *claustrum*. The posterior inner tubercle of the *thalamus* is the *pulvinar*, 'cushion'. Between the two *thalami* is a space, the third 'ventricle'. The term 'ventricle' is applied to several such enclosed hollow areas throughout the body. Arching over this third ventricle is a band of fibers, the *fornix*, 'arch'. The floor of the third ventricle falls into a funnel-like structure, the *infundibulum*, at the bottom of which is the pituitary body, so called from the ancient supposition that this structure secreted phlegm (compare Latin *pituitarius*). Leading back from the third to the fourth ventricle is a passage known as the *iter e tertio ad quartum ventriculum;* it is sometimes called the Aqueduct of Sylvius. A curious fold of gray matter plunges down toward the base of each hemisphere, which, from its fancied resemblance to a fish called the sea-horse, received the name of Hippocampus. At the bottom of the great fissure separating the two hemispheres is a band of tough fibres which the old anatomists called, on account of its hardness as compared with the surrounding brain matter, the *corpus callosum*.

Many other strange and interesting names applied to various parts of the brain might be enumerated, e. g. the *nidus hirundinis*, or the spur-like 'calcarine' fissure, or the bordering 'limbic' lobe (compare Latin *limbus*).

From the brain one passes quite naturally to a consideration of the skull, a word derived from an old English dialectic source. The word *calvarium*, the top or dome of the skull (compare Latin *calvaria*, 'skull') is of interest in relation to the word Calvary. Of the bones that form the skull, the 'parietals' are walls. These are 'occipital' (compare Latin *occiput*), or 'temporal' (compare Latin *tempora*). The 'sphenoid' is a curious bone wedged in the base between the others (compare σφηνοειδής, 'wedge-like'). The 'ethmoid' is a sieve-like bone (compare ἠθμός, a 'strainer') through which the olfactory nerves pass to the nose. Other terms are 'malar' (compare Latin *mala*), and the 'mandible', the lower jaw (compare late Latin *mandibula*, from *mandere*, 'to masticate'). 'Genial' 'relating to the chin', is from Latin *gena*. The 'turbinal', a scroll or wheel-like bone in the nose, reminds us of Latin *turbo*. The bar of bone that forms the side of the cheek, connecting the temporal with the malar, is the 'yoke'; (zygoma, ζύγωμα); the two bones were thought of as yoked together. The eye socket, from its circular rim, is called the 'orbit' (compare Latin *orbis*). The hairless space between the eyebrows is the 'glabella' (compare Latin *glaber*, 'smooth'). The top of the head is indicated by a Greek term, *bregma*. Here, in infancy, a deficiency of bone formation leaves a space in which the pulsing of the blood flow to the brain may be seen and felt; this pulsing has given rise to the name 'fontanelle'

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[1] The writer of this article is a physician, and Professor of Biology at Swarthmore College. C. K.

(compare Latin *fons*). The irregular seams by which the various bones of the skull articulate with one another are 'sutures'; the transverse one between the frontal and the parietals is the 'coronal', where the king's crown is worn. The fore and aft seam between the two parietals is the 'sagittal', the arrow to the bowstring made by the coronal. The suture uniting the parietals and the occipital is called the 'lambdoidal', from its fancied resemblance to the Greek letter lambda.

The word 'skeleton' itself is of Greek origin, and means 'dried up', 'withered'. In the structure of certain bones of the skull there is a spongy place between the outer and an inner harder layer which is known as the 'diploë', a term from the Greek, meaning 'doubled', 'folded over'; the two compact layers are apparently folded the one on the other. Many openings, *foramina*, pierce the walls of the skull, especially its base; through these, nerves and blood vessels pass. Certain depressions or irregularities forming hollows have received the name *fossae*. A deep recess or an inclosure in a bone communicating with outer structures has received the picturesque name of *sinus*, the Latin word which, along with other meanings, denoted a bay or an inlet. This term is likewise applied to various recesses throughout the body, as in the case of the *sinus venosus*, where the blood pools just before entering the heart. *Antrum* is similarly used for the great cavity in the maxillary bone. A 'condyle' is a knob of bone articulating with a shallow depression or 'glenoid' surface; of these terms, the former is from a Greek word meaning 'a knuckle', the latter from a Greek word meaning 'a socket'. The word 'vertebra' comes from the Latin *vertere;* the body is twisted around on this axis. The first vertebra, on which the skull rests, is the 'atlas'. In anatomy the articulation between the atlas and the axis vertebrae is known as the 'atlanto-axial'. At the other end of the vertebral column is the *sacrum;* this part was once used as a dainty bit of sacrifice. *Lumbar* is from Latin *lumbus*, 'loin'. The breast bone, *sternum* (στέρνον), from its fancied resemblance to a Roman dagger, has given rise to several interesting names. The upper portion is the *manubrium*, 'handle'. The central piece is the *gladiolus*, 'blade'; the pointed lower end is the 'ensiform'. 'Styloid' is a name given to certain slender processes of bone: compare Latin *stilus*. A blister-like protuberance of the skull in the earbone of the carnivora is called the *bulla*. On the shoulder blade or *scapula* is the 'acromium', a word derived from the Greek; it = 'the extremity of the shoulder'. The so-called collar bone is the '*clavicle*', from Latin *claviculus*, diminutive of *clavis*, 'key', 'bolt'. The arm pit is in technical language the *axilla*, the point about which the arm is rotated; compare Latin *axis*, English 'axle'. On the scapula also is a process of bone which, in the fancy of the old anatomists, looked somewhat like the beak of a crow; hence they called it the '*coracoid*' (κόραξ, 'a crow'). At the lower end of the vertebral column is a group of vertebrae, the vestige of a tail, the end bone of which, from its likeness to a cuckoo's beak, was called the 'coccyx' (κόκκυξ, 'a cuckoo'). The arm bone is the *humerus*. In the fore arm is the *radius*, 'a spoke' or 'a shaft', and the *ulna;* its upper end is the 'olecranon' (ὠλέκρανον), 'the head of the ulna'. 'Carpus' is the wrist (κάρπος). Fingers and toes are 'digits' (compare Latin *digitus*). Each one is made up of. 'phalanges'; the row of bones is likened to a line of battle. The haunch or hip bones with the sacrum form the *pelvis*, 'a basin', holding, as it were, the organs. Each half of the pelvis is an *os innominatum;* the designation is a declaration of inability to bestow a significant name. The socket of the hip joint is an *acetabulum*, 'vinegar cruet'. The great bump on the upper and outer side of the femur is the 'trochanter', a word akin to τρέχω, 'run'. This is the hip proper. Over the knee joint is the *patella*, or knee cap (sometimes called the knee pan). Certain small bones are lodged in tendons where they cross joints, as in the thumbs; these are 'sesamoid' (compare σησάμη, 'sesame'). In the knee joint are two crescentic pieces of cartilage, each of which is a *meniscus* (compare μηνίσκος, 'the crescent of the moon'). In the leg the larger bone is the *tibia*; the outer bone is the *fibula*. The bump on each side of the ankle is a *malleolus*, 'a little hammer'. *Tarsus* means a flat surface, the flat of the foot (ταρσός). The tarsal bone articulating with the tibia is the *astragulus*, 'knuckle-bone', a term Greek in origin. The heel bone is the *calcaneum* (compare Latin *calcar*, 'a spur'), either as the part on which the spur is clamped, or, what appears more likely, its backward projection was viewed as a cock's spur. Where tendons play over joints, there is a sac or 'bursa' (compare βύρσα, 'hide'; 'wine-sack').

Many of the skeletal muscles have names of curious origin. 'Muscle' itself is from *musculus*, 'a little mouse', from the characteristic creeping motion of a muscle under the skin. The muscle that throws one of the lower limbs across the other is known as the 'sartorius', from Latin *sartor*, 'a tailor', that being the gentleman's characteristic pose. The tough connective tissue binding the bones at joints is a 'ligament' (compare Latin *ligare*). The part of a muscle fastened into a bone is a 'tendon' (compare Latin *tendere*). The great tendon fastening the calf muscles to the heel was Achilles's vulnerable point; hence it is called *tendo Achillis*. The 'deltoid', the fleshy mass on the top of the shoulder of a man, has a general likeness in form to the Greek letter delta. The 'buccinator' muscle of the cheek gets its name from the Latin *buccinare*, 'to blow the trumpet'. The hollow space back of the knee is the 'popliteal' space (compare the Latin *poples);* the tendinous cords on either side are the hamstrings. The sheets of connective tissue which invest each muscle are picturesquely called the 'sheaths', and an extended lining of this tissue is known as a *fascia*, 'fillet'.

'Cilia' are the eyelashes (compare Latin *cilium;* and 'supercilious'). The thin and transparent sheet of membrane on the outside of the eye-ball is the 'conjunctiva', so called because it is joined with the mucous membrane of the nose through the tear duct. The 'iris' is named from Iris, goddess of the rainbow, from its play of light and color, and 'pupil' is from Latin *pupilla*, a little girl, from the small images seen in the eye (compare 'puppet' and *pupa*). The fine net-work of nerves and fibers where the images really play is the 'retina', a word derived, perhaps, from the Latin *rete*. The 'lens' of the eye is shaped like a bean or a lentil.

The ear is a mine of interesting and curious names. There is the *concha*, or outer shell of the ear, with its curved rim or helix (compare ἕλιξ, 'a spiral coil'); the 'tragus' gets its name from the Greek word for a goat, in allusion to the beard-like growth of hairs; the *meatus* is a channel leading inwards (compare *meare;* the sound, as it were, runs in); the *tympanum* is a 'drum'. In the inner ear are the 'labyrinth' and the *ampullae*, or swollen ends of the semicircular canals, so called from their likeness in form to the Roman *ampulla*. The spiral *cochlea*, where all the music of the world sounds, gets its name from the Latin word for a snail's shell. In it also are spiral passage-ways, or *scalae*, 'ladders', twisting around a central column, *modiolus*. The center of the tympanum is the *atrium;* above it is the 'attic'. The bony protrusion back of the ear is the 'mastoid' (compare μαστόs, 'a breast', 'a nipple').

In the throat, the soft palate hangs down like a bunch of grapes; hence it is called *uvula*. The name 'larynx', 'chest', is Greek in origin; its cartilage, the 'thyroid', gets its name from the Greek word for a door-shaped shield. Below this is the 'cricoid', shaped like a signet-ring (κρίκος), and inside the cavity are the 'arytenoid' cartilages, whose name goes back to a Greek word for a pitcher. The wind-pipe, with its gristly rings, is the *trachea* (a term Greek in origin; it literally means 'a rough artery'). Above the larynx is the horse-shoe shaped bone of the tongue, 'hyoid', shaped like the Greek letter upsilon. In the folds of the throat are the 'tonsils' (compare *tonsilla*, 'a sharp stake', diminutive of *tonsa*, 'an oar'). The trachea forks into two 'bronchii' (compare βρόγχος, 'windpipe'). The *rima glottidis* is the slit or chink between the vocal chords (compare *rima*, 'a chink'; and the Greek word for tongue).

The heart has 'auricles', from the little ear-like projections above the spaces so called, and a *septum* between its right and left halves (compare Latin *saepes*, *saeptum*). The heart, likewise, has 'valves', *valvae*. The great trunk leading from the heart, the 'aorta', gets its name from a Greek word meaning 'that which is hung', 'a strap', applied by Hippocrates to the bronchii, but later used by Aristotle for the vessel now bearing its name. 'Artery' is Greek in origin, but the source of the Greek word is not clear. Names of certain arteries come down from antiquity; thus 'carotid' is from a Greek verb signifying 'to stupify by compression'; the ancients believed that stupefaction was caused by squeezing these vessels. A large vessel springing from the abdominal aorta is called 'coeliac', 'of the belly', from κοῖλος, 'hollow'. The arteries supplying the heart itself are the 'coronary' arteries (compare *corona*), because they twist around that organ. 'Vein' is from the Latin *vena; vena cava* is the great cavernous vein of the abdominal cavity. The single vein that runs up the right side of the trunk to the heart is the 'azygous' (ἀζυγος), 'unyoked', 'unpaired'. In the neck is the 'jugular' vein (compare *iugulum*, a yoke). 'Jugal' is frequently applied to the malar bone, yoked with the temporal by the zygoma. A vein of the arm is called the 'basilic', 'royal'; this vein was once supposed to be of special importance. Carrying the blood from the digestive tract into the liver is the 'portal' (compare *porta*).

Secreting organs are 'glands', a word derived from Latin *glandula*, diminutive of *glans*, 'an acorn', from the supposed resemblance of certain of these structures to an acorn. Some glands resemble in their structure a bunch of grapes, and hence are termed 'racemose' (Latin *racemus*, 'a grape bunch'). Among the larger glands of the body is the 'pancreas' (compare πᾶν, 'all', κρέας, 'flesh'). The word 'spleen' is Greek in origin; 'salivary' recalls *saliva*. The sweetbreads or 'thymus' gland won its name from its fancied resemblance to a bunch of thyme, *thymum*. The term 'organ' is from ὄργανον, 'a tool'. 'Viscera', a term used for the internal organs of the body collectively, is Latin. 'Gullet' is from *gula*, 'throat'; the word is cognate with the heraldic term *gules*, 'red color', the color of the throat. 'Oesophagus', Greek in origin, means 'food carrier'. 'Stomach' is Greek in origin; it means 'a little mouth'. 'Pylorus', the right glandular end of the stomach just before it passes into the intestine, gets its name from a Greek word which means 'gate-keeper', 'warder'. 'Sphincter' is from a Greek verb meaning 'to shut tight'. 'Duodenum', the name for the first twelve inches of the intestine, is Latin in origin. 'Intestine' itself is Latin in origin. Its middle portion is the 'jejunum', from Latin *ieiunus*, 'fasting'—the food stuff is mostly absorbed before it reaches this part (the 'hungry gut'). The fold of peritoneum over the intestines is the 'omentum', 'apron'; 'peritoneum' is derived from Greek, and denotes something 'stretched around'. 'Splanchnic', applied to certain structures, is from the Greek word which means 'the inward parts'. An old name for the inward parts was *penetralia*. The chest cavity is the thorax (θώραξ, 'a breast plate'). The muscular sheet between it and the abdominal cavity is the 'diaphragm', a word traceable to a Greek verb meaning 'to hedge in'. The intestine is lined in certain parts by minute absorbing structures called 'villi', 'hairs'.

Among all the organs and tissues of the body nerves and vessels ramify in every direction, forming frequently a 'plexus', 'net-work'. Knots of nervous matter are scattered here and there, each knot being a 'ganglion', a term derived from a Greek word used at first to denote a tumor under the skin in the line of a tendon (the word is so employed by Galen), but later transferred to the gray matter aggregations of the nervous system. The 'sympathetic' system coordinates many of the sensori-motor activities. A nerve going to the eye, and innervating one of the muscles which rotates the eyeball downwards is the *patheticus*, from the familiar Greek verb meaning to 'suffer'. Another pair of cranial nerves of wide distribution is known as the *par vagum*, 'the wandering pair'. Still another, divided into three branches, is the 'trigeminal'.

We have many 'insulas', 'lacunae', 'isthmuses', 'promontories', 'pyramids', a 'hiatus' here and there, 'canals', 'ducts', 'fenestrae', 'aqueducts', 'trochleas' ('pulleys'), 'tunics'.

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RECENT ARCHAEOLOGICAL DISCOVERIES IN ITALY[1]

The Italian Government deserves no little credit for continuing, notwithstanding the stress of war, the publication of the Notizie degli Scavi in the ample manner familiar to all archaeologists. While systematic digging is naturally turned to other than archaeological aims, the heroic present has not wholly displaced Italy's interest in her great past. These belated fascicles of the Notizie that lie before me now—three, four, five, and six of the year 1916—with their record of patient learning, awaken conflicting emotions. They seem to belong so wholly to the days before war came, something alien now, and forever remote. What does a bit of an ancient ruin matter now, or an ancient cemetery? But on second thought they seem a symbol of Italy's permanence too. It is as if this methodical measurement of groins and ashlars were in itself a realization that what has been still is and shall be, though the enemy stand at the gates.

In Rome, civic improvements have brought to light a variety of finds. Excavations on the Via Po (the ancient Via Salaria), during the last months of 1915 and the first of 1916, revealed a small rectangular Columbarium built of *opus reticulatum*, and one hundred and forty-three mortuary inscriptions. One of these, composed in pentameters, has a hemistich—*apstulit atra dies*—which is certainly an echo from Aeneid 6.429: abstulit atra dies et funere mersit acerbo. The chance discovery of a large marble sarcophagus at Mezzocammino, about 11 kilometers out on the Via Ostiensis, led to the excavation of an ancient cemetery and the identification of the Church of St. Cyriacus, which, according to the Liber Pontificalis, Honorius I (625–638) built at the seventh mile of the Via Ostiensis. The cover of the sarcophagus is divided into two fields by a rectangular shield held by two putti. To the right of it is a representation of Jonah being swallowed by the whale, to the left the adoration of the Magi. The front of the sarcophagus also contains Biblical scenes. To the right are the three miracles of the healing of the paralytic, the blind man restored to vision, and the resurrection of Lazarus; to the left, St. Peter renouncing Christ, St. Peter carried to prison, and Moses striking the rock. A small apsidal building of the fourth century, parallel to the Via Ostiensis, disclosed other sarcophagi, two small, and one large. The Church itself, built upon a cemetery, is oriented from south-west to north-east, with the apse turned to the north-east. The entrance lay in the northern side. The lower portion of the walls consists of blocks of tufa, the upper of *opus incertum*. The dimensions of the foundations are about m. 20 x 8.

In repairing the walls of the Instituto Romano dei Beni Stabile (Via Principe Umberto), which were damaged by the earthquake of January 13, 1915, a solid pilaster, composed of six travertine blocks, was found. This may have formed a part of some structure in the Gardens of Maecenas. The R. Instituto Tecnico Leonardo da Vinci, formerly the monastery of S. Francesco di Paola, also suffered from the earthquake, and the course of repairs disclosed a subterranean chamber about 5 by 5 meters, with an entrance on the north side. Several small objects, of slight importance, were found in the chamber—a marble herm, 2 clay lamps, etc. More important was the discovery of the ancient cross-road which connected the Via Appia and the Via Latina about seven miles from Rome. This was found about 30 centimeters below the level of the Campagna. It is 2 meters wide and is excellently preserved throughout the distance (40 meters) which has been excavated.

The only work of any artistic worth found is a headless statue representing a matron in the guise of Ceres, uncovered in connection with improvements to the Rome-Naples railroad near the arches of the Acqua Felice. With its plinth, the statue measures about 1.69 meter in height. The figure, clad in a chiton and a himation, rests its weight upon the right foot, and conforms to the Praxitelean type. Especially fine is the execution of the left hand and the draperies. The work is doubtless a copy of some celebrated original and was intended for a niche in some sepulchral monument, as the unfinished back seems to show.

At Pompeii, a number of inscriptions were found in the Via dell' Abbondanza. Excavations in the Casa di Trebio Valente revealed an elegant marble stand whose support is a herm of the bearded Dionysos, and three bronze statuettes, of inferior merit, representing Venus, Mercury, and Hercules. More interesting is the Oscan inscription painted in red letters which was found on the exterior wall of No. 2, Insula IV, Regio III. Unfortunately, about one-third of the inscription was destroyed by the subsequent insertion of a window to light the shop.

The inscription contains data that are of interest in early Pompeian topography in that it mentions a Via and a Turris Mefira, and a Porta Urubla.

At Ostia, the excavation of the Piazzale delle Corporazioni was completed. G. Calza therefore takes occasion (pages 138–139) to coordinate the data offered by the reports of earlier work and to present a description of the Piazzale which scholars will assuredly find

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[1] This paper was written in April, 1917, but its publication has been unhappily delayed, of necessity. C. K.